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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,789	03/22/2004	Hai-Feng Wang	MS1-0606USC1	2367

22801 7590 10/14/2008

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EXAMINER	
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ART UNIT	PAPER NUMBER
2168	

MAIL DATE	DELIVERY MODE
10/14/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/806,789	WANG ET AL.	
	Examiner	Art Unit	
	AARON SANDERS	2168	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 July 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *37-41 and 72-82* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *37-41 and 72-82* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 July 2008* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 28 July 2008 has been entered.

Response to Amendment

The amendment filed 28 July 2008 has been entered. Claims 37-41 and 72-82 are pending. Claims 37-41, 72, and 78-82 are currently amended. Claims 1-37 and 42-71 are cancelled. No claims are new. This action is NON-FINAL.

Drawings

The amendment to the drawings filed 28 July 2008 has been entered.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the steps of claims 37, 72, and 78 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Figs. 8 and 9 are objected to because of improper shading. All drawings must be made by a process which will give them satisfactory reproduction characteristics. See 37 C.F.R. 1.84(l) and (m).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

As per claim 37, it appears that the phrase "how probable the query pertains" (used three times) should be "how probable it is that the query pertains."

As per claim 72, the limitation "producing one or more output" should be "producing one or more outputs." Further, the limitation "deriving confidence values associated with rules and with items in the rules that indicate, how reliably the rules are matched to the output" is unclear because it is not clear if there are separate "confidence values" associated with the "rules" and

the "items in the rules," or if there is one set of "confidence values" for both. Finally, the limitation "wherein the one or more output" should be "wherein the one or more outputs."

Claim Rejections - 35 USC § 112, First Paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 37, 72, and 78 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

In claim 37, the limitations "deriving confidence values… that indicate how reliably the rules relate the query to the list of frequently asked questions," "deriving confidence values… that indicate how reliably the rules are matched to the query," "wherein the derivation of at least one of the confidence values… is facilitated by iterative training of a neural network using data from the log database as training data, wherein the neural network utilizes a non-linear activation function," and "assigning weights indicating how probable the query pertains to the frequently asked questions" are not disclosed in the specification.

In claim 72, the limitations "deriving confidence values… that indicate how reliably the rules are matched to the output" and "assigning weights indicating how the output, the list of frequently asked questions and answers pertain to each other" are not disclosed in the specification.

In claim 78, the limitations "confidence values… that indicate how reliably the rules relate the parse tree to a list of frequently asked questions," "confidence values… that indicate how reliably the rules are matched to the parse tree," and "weights indicating how relevant the parse tree and the one or more keywords are to a the list of frequently asked questions" are not disclosed in the specification.

Applicant is required to cancel the new matter in response to this Office action.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 37-41 and 72-82 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The processes of claims 37-41 and 72-77 are not statutory because abstract ideas alone are not patentable. To be patentable, an algorithm must have a practical application and (1) be tied to a particular machine or (2) create or involve a composition of matter or manufacture. *In re Comiskey*, 499 F.3d 1365, 1376-77.

An algorithm that is only useful in connection with a computer is still not "tied" to a machine. *Gottschalk v. Benson*, 409 U.S. 63, 64, 71-72 (A method of converting binary-coded decimal numerals into pure binary numerals was "not limited to any particular art or technology, to any particular apparatus or machinery, or to any particular end use" and would "wholly preempt the mathematical formula and in practical effect would be a patent on the algorithm itself"). Rather, a claim reciting an algorithm is statutory only if, as employed in the process, "it

is embodied in, operates on, transforms, or otherwise involves another class of statutory subject matter, i.e., a machine, manufacture, or composition of matter." *In re Comiskey*, 499 F.3d at 1376.

Here, the processes are not "tied" to a machine because a human could perform the method steps with any computer. Further, the processes do not change the state of another statutory category. The claims do recite "returning the answers in response to the query," but it is not clear that this is output on a computer monitor, which may be statutory.

The system of claims 78-82 is non-statutory because it recites two pieces of hardware that are not related to each other, i.e. a processor and memory. To be a proper system, the hardware must be related, e.g. a processor and a memory containing instructions that when executed by the processor cause the method steps to be performed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 37-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Warthen, U.S. 6,584,464, in view of Richards et al., U.S. 5,995,921, in view of Machiraju et al., U.S. 6,028,601, and in view of pp. 19-22 of Applicant's Remarks filed 28 July 2008 (Applicant's Admitted Prior Art or AAPA).

37. Warthen teaches "*A method comprising: receiving a query*," see col. 1, ll. 54-67, "The query input processor is used for accepting an initial user query."

Warthen teaches "*mapping the query from a query space to a question space to identify associated frequently asked questions (FAQ), the mapping comprising*," see col. 2, ll. 1-11, "a semantic network to obtain a weighted list of well-formed questions representative of possible semantic meanings for the initial user query."

Warthen teaches "*mapping the associated frequently asked questions from the question space to a template space to identify associated templates*," see col. 3, ll. 41-51, "QPE 30 is coupled to dictionary 34 and semantic net snapshot 40 and uses the information obtained from those sources to generate template questions in response to a user-entered question" where QPE means "Query Processing Engine" and the referenced "semantic net" is the claimed "question space."

Warthen teaches "*mapping the templates from the template space to an answer space to identify associated answers*," see col. 3, ll. 41-51, "Template questions are questions that are mapped to answers in question-answer mapping table 42."

Warthen teaches "*and returning the answers in response to the query*," see col. 4, ll. 19-24, "information server 50 uses AE [*sic*] to generate answers to the questions and either presents the user with one or more URL's of sites that answer the initial question" where "AE" should be "APE" and means "Answer Processing Engine", see Fig. 1.

Warthen does not teach "*analyzing a log database to determine a relevance of previously stored frequently asked questions to the query, the analyzing comprising*." Machiraju does, however, see Fig. 12 and col. 8, ll. 31-46, "In step 705, the invention matches the entered

question with questions stored in questions database 220. In step 710, the questions list 215 is generated in the client application 202, and the user determines if at least one question in questions list 215 sufficiently matches the entered question," where the claimed "log database" is the referenced "question database." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Machiraju's teachings would have allowed Warthen's method to increase the system's knowledge base through user interaction, see Machiraju col. 2, l. 59 – col. 3, l. 6.

Warthen does not teach "*deriving confidence values associated with rules that indicate how reliably the rules relate the query to the list of frequently asked questions.*" Richards does, however, see Fig. 5A and col. 7, ll. 18-38, "Each entry of rule set 212 contains, inherently, the comparative relationship between a specific base word and a candidate answer. For example, if a specific base word… is very likely related to a specific answer number, the value of the point field will be set positively," where the claimed "confidence value" is the referenced "point field." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Richards' teachings would have allowed Warthen's method to allow users "to ask questions and make inquiries about topics unrelated to their current context or location within the software," see col. 1, ll. 60-63.

Warthen does not teach "*deriving confidence values associated with items in the rules that indicate how reliably the rules are matched to the query.*" Richards does, however, see Fig. 5A and col. 8, ll. 1-30, "Answer array 222… is used to maintain the cumulative values for all answers… Specifically, each entry of answer array 222 includes… a sum field, representing the total cumulative value of points scored by the answer," where the claimed "confidence value" is

the referenced "sum field." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Richards' teachings would have allowed Warthen's method to allow users "to ask questions and make inquiries about topics unrelated to their current context or location within the software," see col. 1, ll. 60-63.

Warthen does not teach "*wherein the derivation of at least one of the confidence values associated with items in the rules is facilitated by iterative training of a neural network using data from the log database as training data.*" AAPA does, however, see e.g. Fig. 19.11 and p. 21, "The generic neural network learning method: adjust the weights until predicted output values O and true values T agree." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because AAPA's teachings would have allowed Warthen's method to gain a well-known means for training a system, see AAPA p. 19.

Warthen does not teach "*wherein the neural network utilizes a non-linear activation function.*" AAPA does, however, see p. 20, "In computer simulations, the solution can only be found by iterative techniques, because of the non-linearity of the functions S~ and the existence of feedback." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because AAPA's teachings would have allowed Warthen's method to gain a well-known means for training a system, see AAPA p. 19.

Warthen does not teach "*deriving confidence values based on how many words in the query match items in the rule.*" Richards does, however, see Fig. 5C and col. 8, ll. 57-67, "In

particular, each entry tie array 225 includes… a best choice field which may be implemented with a Boolean variable, indicating which of the two answer number fields is the preferred of the two answers," where the claimed "confidence value" is the referenced "best choice." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Richards' teachings would have allowed Warthen's method to allow users "to ask questions and make inquiries about topics unrelated to their current context or location within the software," see col. 1, ll. 60-63.

Warthen does not teach "*assigning weights indicating how probable the query pertains to the frequently asked questions.*" Machiraju does, however, see col. 5, ll. 30-44, "If a word in the user's query matches a word in a question in the questions database 220, then one point is assigned for the question in questions database 220. If other words in the user's query match words in the database question, then additional points are assigned," where the claimed "weight" is the referenced "point." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Machiraju's teachings would have allowed Warthen's method to increase the system's knowledge base through user interaction, see Machiraju col. 2, l. 59 – col. 3, l. 6.

Warthen does not teach "*and assigning weights indicating how probable particular answers pertain to particular frequently asked questions.*" Machiraju does, however, see Fig. 12 and col. 8, l. 47 – col. 9, l. 3, "In step 750, the user has an option of whether to link his/her question to a selection in a retrieved document. If the user chooses to link the question to the selection, then in step 755 the user's question and linked answer(s) are stored in questions database 220," where the claimed "assigning weights" is the referenced linking. Thus, it would

have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Machiraju's teachings would have allowed Warthen's method to increase the system's knowledge base through user interaction, see Machiraju col. 2, l. 59 – col. 3, l. 6.

Warthen does not teach "*wherein the weights are derived over time based on training facilitated by data in the log database.*" Machiraju does, however, see Fig. 12 and col. 8, l. 47 – col. 9, l. 3, "In step 750, the user has an option of whether to link his/her question to a selection in a retrieved document. If the user chooses to link the question to the selection, then in step 755 the user's question and linked answer(s) are stored in questions database 220," where the claimed "training" is the referenced optional user linking and the claimed "log database" is the referenced "question database." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Machiraju's teachings would have allowed Warthen's method to increase the system's knowledge base through user interaction, see Machiraju col. 2, l. 59 – col. 3, l. 6.

Warthen does not teach "*wherein the confidence values and weights facilitate the determination of the relevance.*" Machiraju does, however, see col. 5, ll. 30-44, "The matched questions from questions database 220 are output in question list 215 starting with the question having the most points." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Machiraju's teachings would have allowed Warthen's method to increase the system's knowledge base through user interaction, see Machiraju col. 2, l. 59 – col. 3, l. 6.

Warthen does not teach "*and ascertaining from the previously stored frequently asked questions the associated frequently asked questions based on the determined relevance.*" Machiraju does, however, see Fig. 12 and col. 8, ll. 31-46, "In step 705, the invention matches the entered question with questions stored in questions database 220. In step 710, the questions list 215 is generated in the client application 202, and the user determines if at least one question in questions list 215 sufficiently matches the entered question." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Machiraju's teachings would have allowed Warthen's method to increase the system's knowledge base through user interaction, see Machiraju col. 2, l. 59 – col. 3, l. 6.

38. Warthen teaches "*The method as recited in claim 37, wherein the mapping from the query space to the question space comprises: parsing the query to identify at least one associated concept*," see col. 5, ll. 26-35, "Another approach to tokenizing is to scan the initial user query and group words into conceptual strings."

Warthen teaches "*and correlating the concept to one or more frequently asked questions*," see col. 5, ll. 26-35, "Tokenizer 150 converts the initial user query into a list of words and provides the list to parser 155" where, see Abstract, "the question processor includes a tokenizer for tokenizing the initial user query into a list of words" and, see Abstract, "The question processor processes the initial user query to identify a set of possible well-formed questions selected from the question database, where a well-formed question is a question in the database that is coupled to at least one answer reference" which correlates the concepts to frequently asked questions.

39. Warthen teaches "*The method as recited in claim 37, wherein the mapping from the question space to the template space comprises cross-indexing from a first table containing question identifications to a second table containing template identifications*," see col. 3, ll. 41-51, "a knowledge base 36, which comprises storage for a semantic net snapshot 40 and a question-answer mapping table 42. QPE 30 is coupled to dictionary 34 and semantic net snapshot 40 and uses the information obtained from those sources to generate template questions in response to a user-entered question."

40. Warthen teaches "*The method as recited in claim 39, wherein the mapping from the template space to the answer space comprises cross-indexing from the second table to a third table containing answer identifications*," see col. 3, ll. 41-51, "Template questions are questions that are mapped to answers in question-answer mapping table 42."

41. Warthen teaches "*The method as recited in claim 37, further comprising: presenting the answers to a user for confirmation as to which of the answers represent the user's intentions in the query*," see Fig. 3.

Warthen teaches "*analyzing the query and the answers confirmed by the user*," see col. 5, ll. 8-14, "FIG. 3 shows an example display 90 resulting from such a questions display page. From that display 90, the user can select the desired template question and parameters, or can select a button 92 for more answers, resulting in a display such as that shown in FIG. 4."

Warthen teaches "*and modifying the answers that are returned in response to the query based on information gleaned from the analyzing*," see Figs. 3 and 4.

Claims 72-82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Warthen, U.S. 6,584,464, in view of Richards et al., U.S. 5,995,921, in view of Machiraju et al., U.S. 6,028,601, and in view of Fung et al., U.S. 6,687,689.

72. Warthen teaches "*A method of parsing a search query, comprising*," see Fig. 5 and col. 5, ll. 36-44, "Parser 155 identifies the set of possible syntactic structures that could represent the question(s) being asked."

Warthen does not teach "*segmenting the search query into individual character strings, wherein at least one of the individual character strings comprises a single character*." Fung does, however, see Fig. 4 and col. 8, ll. 13-28, "Preferably, the query includes Chinese characters or syllables that were entered by a user at a first geographic location. Next, in a step 415, the document finder 301 determines words within the query." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Fung's teachings would have allowed Warthen's method to gain greater versatility in searching the Internet, see col. 2, ll. 3-14.

Warthen teaches "*producing one or more output from the individual character strings, the one or more output selected from a group consisting of: a parse tree produced from at least one parsable character string of the search query; a partially-parsed fragment produced from one or more partially parsable character strings of the search query; and at least one keyword generated based at least on one non-parsable character string of the search query*," see Fig. 8 and col. 6, ll. 9-14, "Once keywords are mapped to questions, the questions are mapped to answers using question-answer mappings 202. A small portion 204 of semantic net 200 is shown in detail in FIG. 8," where the claimed "parse tree" is the referenced "semantic map" and the

claimed "output," e.g. the claimed "parsable character string," is the referenced question "What disease could be indicated by having the symptoms <SymptomList>?"

Warthen teaches "*wherein the one or more output are used to return answers to the search query*," see Fig. 9, "Internet (end user)" and Figs. 3 and 4.

Warthen does not teach "*wherein for each output that comprises a parse tree or a partially-parsed fragment, a relevance of the output to a list of frequently asked questions (FAQ) is determined, the determination of the relevance comprising.*" Machiraju does, however, see Fig. 12 and col. 8, ll. 31-46, "In step 705, the invention matches the entered question with questions stored in questions database 220. In step 710, the questions list 215 is generated in the client application 202, and the user determines if at least one question in questions list 215 sufficiently matches the entered question." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Machiraju's teachings would have allowed Warthen's method to increase the system's knowledge base through user interaction, see Machiraju col. 2, l. 59 – col. 3, l. 6.

Warthen does not teach "*deriving confidence values associated with rules and with items in the rules that indicate how reliably the rules are matched to the output.*" Richards does, however, see Fig. 5C and col. 8, ll. 57-67, "In particular, each entry tie array 225 includes… a best choice field which may be implemented with a Boolean variable, indicating which of the two answer number fields is the preferred of the two answers," where the claimed "confidence value" is the referenced "best choice." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Richards' teachings would have allowed Warthen's method to allow users "to ask

questions and make inquiries about topics unrelated to their current context or location within the software," see col. 1, ll. 60-63.

Warthen does not teach "*wherein the derivation of at least one of the confidence values is facilitated by using data from the log database as training data.*" Machiraju does, however, see Fig. 12 and col. 8, ll. 31-46, "In step 705, the invention matches the entered question with questions stored in questions database 220. In step 710, the questions list 215 is generated in the client application 202, and the user determines if at least one question in questions list 215 sufficiently matches the entered question," where the claimed "log database" is the referenced "question database." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Machiraju's teachings would have allowed Warthen's method to increase the system's knowledge base through user interaction, see Machiraju col. 2, l. 59 – col. 3, l. 6.

Warthen does not teach "*and assigning weights indicating how the output, the list of frequently asked questions and answers pertain to each other.*" Machiraju does, however, see Fig. 12 and col. 8, l. 47 – col. 9, l. 3, "In step 750, the user has an option of whether to link his/her question to a selection in a retrieved document. If the user chooses to link the question to the selection, then in step 755 the user's question and linked answer(s) are stored in questions database 220," where the claimed "assigning weights" is the referenced linking. Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Machiraju's teachings would have allowed Warthen's method to increase the system's knowledge base through user interaction, see Machiraju col. 2, l. 59 – col. 3, l. 6.

Warthen does not teach "*wherein the confidence values and weights facilitate the determination of the relevance*." Machiraju does, however, see col. 5, ll. 30-44, "The matched questions from questions database 220 are output in question list 215 starting with the question having the most points." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Machiraju's teachings would have allowed Warthen's method to increase the system's knowledge base through user interaction, see Machiraju col. 2, l. 59 – col. 3, l. 6.

73. Warthen teaches "*The method of claim 72, further comprising: conducting keyword searching using the at least one keyword*," see col. 1, ll. 8-19, "initiate a search with a particular set of keywords."

74. Warthen teaches "*The method of claim 72, wherein the parse tree represents a collection of concepts related to the search query*," see Fig. 6, where the referenced "automobile" semantic map qualifies as the claimed "tree" and is a collection of concepts related to a search query.

75. Warthen teaches "*The method of claim 74, further comprising matching the parsed concepts to a list of frequently asked questions*," see col. 6, ll. 1-8, "Since the list is of instantiated questions that are based on template questions, they will be found in question-answer mapping table 42" where "Template questions are questions that are mapped to answers in question-answer mapping table 42" and as such qualify as "frequently asked questions."

76. Warthen teaches "*The method of claim 75, further comprising: identifying at least one answer associated with the list of frequently asked questions that match the parsed concepts and keywords*," see col. 1, ll. 54-67, "The question processor processes the initial user query to

identify a set of possible well-formed questions selected from the question database, where a well-formed question is a question in the database that is coupled to at least one answer reference."

Warthen teaches "*and presenting the at least one answer to a user in a user interface that permits a user to select a desired answer from the one or more answers*," see col. 4, ll. 19-24, "Once the user selects a template question, information server 50 uses AE to generate answers to the questions and either presents the user with one or more URL's of sites that answer the initial question (step 9A) and control passes to an answer display page (step 9B) that presents the user with the answer directly (step 10)."

77. Warthen teaches "*The method of claim 76, further comprising: logging the search query and at least one answer selected by the user in a log database*," see col. 3, ll. 27-40, "As shown in FIG. 1(a), actions taken by users in response to prompts on the basic set of pages are logged in log files 20" where there is a "log user question" and a "log user pick."

Warthen teaches "*and analyzing the log database to derive at least one weighting factor indicating how relevant the frequently asked questions are to the parsed concepts and keywords*," see col. 4, ll. 31-42, "The query is logged to log files 20 for use in further refining information server 50" and Claim 9, "removing template questions from the set that have a confidence weight below a predetermined threshold."

78. Warthen teaches "*A system comprising: a processor*," see col. 1, ll. 54-67, "The information server includes a query input processor, a question processor and an answer processor."

Warthen teaches "*and one or more memories, wherein the one or more memories have stored thereon computer executable modules, the computer executable modules comprising*," see col. 3, ll. 41-56, "Information server 10 also includes a dictionary 34 and a knowledge base 36, which comprises storage for a semantic net snapshot 40 and a question-answer mapping table 42."

Warthen teaches "*a parser for a search engine comprising*," see Fig. 5 and col. 5, ll. 36-44, "Parser 155 identifies the set of possible syntactic structures that could represent the question(s) being asked."

Warthen teaches "*a natural language parser module that produces a parse tree from one or more parsable character strings of the search query*," see Fig. 8 and col. 6, ll. 9-14, "Once keywords are mapped to questions, the questions are mapped to answers using question-answer mappings 202. A small portion 204 of semantic net 200 is shown in detail in FIG. 8," where the claimed "parse tree" is the referenced "semantic map."

Warthen teaches "*and a keyword parser to identify one or more keywords in the search query and to output the one or more keywords*," see col. 4, ll. 31-42, "The initial user query can be a natural language question (e.g., 'Where can I find information on the sport bicycling?') and may well include grammatical errors, or a set of keywords, such as 'info sport bicycling'… When the user presses button 84, the initial user query is sent to information server 50 and client interface 60 passes the query to QPE 30," where keywords have clearly been identified and "output" to QPE.

Warthen teaches "*and a log analyzer that utilizes data in a log database to derive, over time, various probabilities comprising*," see Abstract, "a matcher for matching the canonical

syntactic structure against a semantic network to obtain a weighted list of well-formed questions representative of possible semantic meanings for the initial user query."

Warthen teaches "*and weights indicating how relevant the parse tree and the one or more keywords are to a the list of frequently asked questions*," see Abstract, "a matcher for matching the canonical syntactic structure against a semantic network to obtain a weighted list of well-formed questions representative of possible semantic meanings for the initial user query."

Warthen teaches "*wherein the parse tree, the confidence values, the weights and the one or more keywords are used to return answers to the search query*," see Fig. 9, "Internet (end user)" and Figs. 3 and 4.

Warthen does not teach "*a segmentation module that segments a search query into one or more individual character strings*." Fung does, however, see Fig. 4 and col. 8, ll. 13-28, "Preferably, the query includes Chinese characters or syllables that were entered by a user at a first geographic location. Next, in a step 415, the document finder 301 determines words within the query". Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Fung's teachings would have allowed Warthen's method to gain greater versatility in searching the Internet, see col. 2, ll. 3-14.

Warthen does not teach "*confidence values associated with rules that indicate how reliably the rules relate the parse tree to a list of frequently asked questions*." Richards does, however, see Fig. 5A and col. 7, ll. 18-38, "Each entry of rule set 212 contains, inherently, the comparative relationship between a specific base word and a candidate answer. For example, if a specific base word… is very likely related to a specific answer number, the value of the point

field will be set positively," where the claimed "confidence value" is the referenced "point field." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Richards' teachings would have allowed Warthen's method to allow users "to ask questions and make inquiries about topics unrelated to their current context or location within the software," see col. 1, ll. 60-63.

Warthen does not teach "*confidence values associated with items in the rules that indicate how reliably the rules are matched to the parse tree*." Richards does, however, see Fig. 5A and col. 8, ll. 1-30, "Answer array 222... is used to maintain the cumulative values for all answers... Specifically, each entry of answer array 222 includes... a sum field, representing the total cumulative value of points scored by the answer," where the claimed "confidence value" is the referenced "sum field." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Richards' teachings would have allowed Warthen's method to allow users "to ask questions and make inquiries about topics unrelated to their current context or location within the software," see col. 1, ll. 60-63.

Warthen does not teach "*wherein the derivation of at least one of the confidence values associated with items in the rules is facilitated by training using data from the log database as training data*." Machiraju does, however, see Fig. 12 and col. 8, ll. 31-46, "In step 705, the invention matches the entered question with questions stored in questions database 220. In step 710, the questions list 215 is generated in the client application 202, and the user determines if at least one question in questions list 215 sufficiently matches the entered question," where the claimed "log database" is the referenced "question database." Thus, it would have been obvious

to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Machiraju's teachings would have allowed Warthen's method to increase the system's knowledge base through user interaction, see Machiraju col. 2, l. 59 – col. 3, l. 6.

79. Warthen teaches "*The system of claim 78, wherein the parse tree represents a collection of concepts related to the search query*," see Fig. 6, where the referenced "automobile" semantic map qualifies as the claimed "tree" and is a collection of concepts related to a search query.

80. Warthen teaches "*The system of claim 78, further comprising a search module that matches the parsed concepts to a list of frequently asked questions*," see col. 6, ll. 1-8, "Since the list is of instantiated questions that are based on template questions, they will be found in question-answer mapping table 42" where "Template questions are questions that are mapped to answers in question-answer mapping table 42" and as such qualify as "frequently asked questions."

81. Warthen teaches "*The system of claim 80, wherein the search module: identifies at least one answer associated with the list of frequently asked questions that match the parsed concepts and keywords*," see col. 1, ll. 54-67, "The question processor processes the initial user query to identify a set of possible well-formed questions selected from the question database, where a well-formed question is a question in the database that is coupled to at least one answer reference."

Warthen teaches "*and presents the at least one answer to a user in a user interface that permits a user to select a desired answer from the one or more answers*," see col. 4, ll. 19-24,

"Once the user selects a template question, information server 50 uses AE to generate answers to the questions and either presents the user with one or more URL's of sites that answer the initial question (step 9A) and control passes to an answer display page (step 9B) that presents the user with the answer directly (step 10)."

82. Warthen teaches "*The system of claim 81, wherein the search module: logs the search query and at least one answer selected by the user in the log database*," see col. 3, ll. 27-40, "As shown in FIG. 1(a), actions taken by users in response to prompts on the basic set of pages are logged in log files 20" where there is a "log user question" and a "log user pick."

Warthen teaches "*and analyzes the log database to derive at least one weighting factor indicating how relevant the frequently asked questions are to the parsed concepts and keywords*," see col. 4, ll. 31-42, "The query is logged to log files 20 for use in further refining information server 50" and Claim 9, "removing template questions from the set that have a confidence weight below a predetermined threshold."

Response to Arguments

As per Applicant's argument that the drawings show the methods of claims 37 and 72, the Examiner respectfully disagrees. Specifically, the steps of "mapping," "analyzing," "deriving confidence values," "deriving confidence values," "deriving confidence values," "assigning weights," "assigning weights," "ascertaining," and "returning" in claim 37 are not shown. Further, the steps of "segmenting," "producing," "deriving confidence values," "assigning weights," and "returning" in claim 72 are not shown. Any amendment to the figures must be made with reference to the specification to avoid a new matter rejection.

As per Applicant's argument that the limitation "iterative training of a neural network… wherein the neural network utilizes a non-linear activation function" complies with 35 U.S.C. 112, the Examiner respectfully disagrees. While the limitation may have been well-known to one of ordinary skill in the art at the time of the invention, Applicant did not consider it important enough at the time the application was filed to include it in the specification and therefore it cannot be added now. The claim recites a genus, while the specification recites a species. As such, the claim does not comply with the written description and enablement requirements of 35 U.S.C. 112.

As per Applicant's argument that claims 78-82 are statutory under 35 U.S.C. 101, the Examiner respectfully disagrees. The system of claims 78-82 is non-statutory because it recites two pieces of hardware that are not related to each other, i.e. a processor and memory. To be a proper system, the hardware must be related, e.g. a processor and a memory containing instructions that when executed by the processor cause the method steps to be performed.

As per Applicant's argument that the prior art of record (i.e. Warthen, Bowman, Lin, and Fung), the Examiner agrees. The Examiner has cited Richards et al., U.S. 5,995,921, in view of Machiraju et al., U.S. 6,028,601 as teaching the missing limitations. Thus, Applicant's arguments with respect to the 35 U.S.C. 103 rejections of claims 37-41 and 72-82 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron Sanders whose telephone number is 571-270-1016. The examiner can normally be reached on M-F 9:00a-4:00p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Vo can be reached on 571-272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tim T. Vo/
Supervisory Patent Examiner, Art Unit 2168

/Aaron Sanders/
Examiner, Art Unit 2168
7 October 2008